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"Western Treasure -- Deep, Wet Snow"

FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for

COLORADO RIVER DRAINAGE BASIN

MAY 1, 1948

Ву

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and

Colorado Agricultural Experiment Station

Data included in this report were obtained by the agencies named above in cooperation with the U. S. Forest Service, National Park Service, State Engineers of Colorado, Wyoming and New Mexico and other Federal, State and local organizations.



May 1, 1948

WATER SUPPLY OUTLOOK

COLORADO RIVER DRAINAGE

Snow Cover on the headwaters of the Colorado River and its tributaries in Colorado, as shown by snow surveys on May 1, is above normal. Average snow water content is less than last year except on the San Juan where conditions are much improved. During the month of April snowfall was generally deficient over western Colorado which resulted in considerable snow melt at lower elevations and only a slight increase in snow measurements on high courses. The flow of all major tributary streams is expected to be above average and relatively higher on the Gunnison and San Juan. The summer flow of the Green River in Wyoming will be somewhat higher than indicated April 1. Drought conditions are continuing in Arizona and reservoir storage is low.

The April-September flow of the Colorado River near Grand Canyon is expected to be 11,800,000 acre feet.

COLORADO RIVER AND TRIBUTARIES IN COLORADO

Colorado River (Above Grand Junction): Average snow cover is 13 percent above normal and 13 percent below last year on the headwaters of the Colorado main stem. The distribution of the snow follows a generally average pattern with a slight deficiency near Willow Creek Pass and relatively high cover on the headwaters of the Blue River and adjacent areas. Recent precipitation has been normal at higher elevations and somewhat deficient in the lower valley. Stream flows were about normal during April, but were rising at the end of the month. Range and crops conditions are good. Soil moisture is excellent except the top few inches in irrigated areas.

Gunnison River: The outlook for summer flow on the Gunnison is unchanged from April 1. It will considerably enceed the 1947 season and the average. Precipitation in the Uncompander valley is reported as high and the soil is wet, delaying farming operations. The flow of the Gunnison during April was 112 percent of normal with the Uncompander 171 percent. Snow cover on the Taylor and East Rivers is unusually high for May 1. Storage in Taylor Park reservoir is now 88,000 acre feet as compared to 65,000 on May 1, 1947.

Yampa and White Rivers: Snow on the headwaters of the Yampa is now 14 percent above normal and 6 percent below last May 1. Precipitation throughout the winter season has been above normal. The summer flow of this stream will be above average but less than last year. Soil moisture conditions are good. On the White River there was a substantial drop in snow water content on the courses during April and much of the moisture at lower elevations went into the ground. Soil moisture conditions are excellent and the crop outlook is good. The summer discharge of the Elk and Little Snake rivers will be slightly above normal but less than a year ago. Snow on the Wyoming tributaries of the Little Snake is relatively high.

Miscellaneous Series Paper No. 413, Colorado Agricultural Experiment Station

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San Juan and Animas Rivers: Heavy snow melt occurred on the watershed of the Animas River this past month and all of the snow is gone from lower elevation courses. Stream flow is well above normal. The snow cover in high elevations along the Continental Divide is about the same as April 1 and continued heavy flow on the San Juan and Animas may be expected. Snow water content on the Upper San Juan course near Wolf Creek Pass is 42 inches as compared to an average of 31 for May 1. Soil moisture condition in irrigated areas is excellent except for drying of top soil. Range and crop conditions are good. The summer flow of the San Juan at Rosa, New Mexico is expected to be 1,100,000 acre feet and for the Animas at Durango 700,000. Storage in Vallecito reservoir has dropped sharply during the past month to 20,400 acre feet in anticipation of heavy summer flow in the Los Pinos River.

Dolores River: All of the low snow in the watershed of the Dolores and San Miguel rivers was gone by May 1. Earlier snow surveys indicate that the summer runoff will be somewhat above normal on these streams. Soil moisture is fair due to drying and stream flow is high. Storage in Groundhog and Narraquinepp reservoirs is now 25,710 acre feet as compared to 21,000 a year ago.

GREEN RIVER IN WYOMING

The estimate of summer discharge of the Green River in Wyoming is somewhat improved over April 1. During 1947 summer precipitation was unusually heavy resulting in summer floods during May and June so this seasons! flow will be considerably under last year and about normal. Current stream flow is about average. Soil moisture on lower range areas is short but good at higher elevations. Snow cover as of May 1 is 22 percent above average, but April has been cool at high elevations. The April-September discharge of the Green River at Linwood, Utah is expected to be 1,100,000 acre feet,

COLORADO RIVER AND TRIBUTARIES IN ARIZONA

The drought condition of the past three seasons continues in Arizona. No snow courses have been measured since April 1, but very little snow is left at any elevation. Recent precipitation has been below normal. Stream flow as a result of winter snow is disappointing. Soil moisture in irrigated areas is drying out rapidly. Crop conditions are reported as good for the areas planted. Storage in the four major Salt River Reservoirs now totals 399,000 acre feet, slightly more than a year ago. San Carlos Reservoir contains 14,000 acre feet. On May 1, 1947 it was empty. The sharp decline in average ground water levels in the Salt River Valley is continued and the level now is at the lowest point of record.

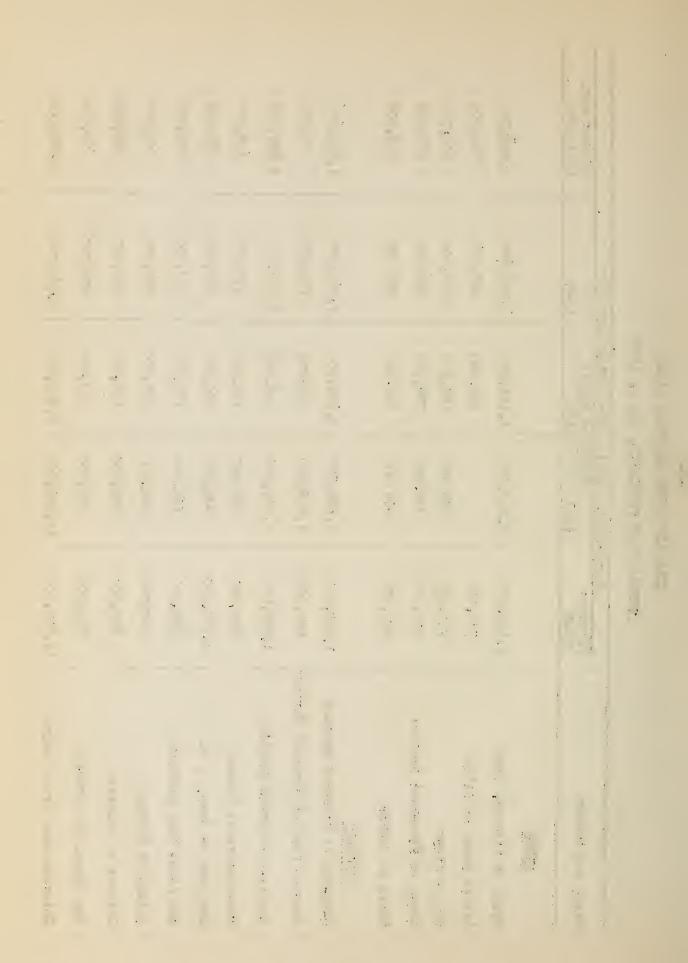
Available storage in Lake Mead is now 19,144,000 acre feet. 2,800,000 over May 1, 1947.

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-3-COLORADO RIVER DRAINAGE BASIN STREAM FLOW FORECASTS, May 1, 1948

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	250,000	234,400	184,120	226,000	207,000
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White at Meeker 325,	325,000	000°404	248,000	.35 ⁴ , coo	298,000
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Colorado at Glenwood Springs 1,700,	1,700,000	1,880,000	1,148,000	1,402,000	1,403,000
Roaring Fork at Glenwood Springs 900,	000,006	1,008,000	635,000	150,000	7.16,000
Gunnison at Grand Junction 1,900,	000,006	1,509,000	000,906	1,457,000	1,527,000
Uncompangre at Colona 250,	250,000	225,000	110,000	1,74,000	176,000
San Juan at Rosa, N. M. 1,100,	100,000	439,000	280,000	000 *299	751,000
Los Pinos Wear Bayfield 300,	300,000	135,000	185,000	157,000	255,000
Animas at Durango 700,	700,000	540,000	340,000	7,65,000	508,000
Dolores at Dolores 400,	100,000	288,000	194,000	300,000	325,000
San Miguel at Naturita 300,	300,000	180,000	133,000	217,000	290,000
Colorado near Grand Canyon 11,800,	800,000	10,986,000	6,505,000	9,562,000	000,609,6

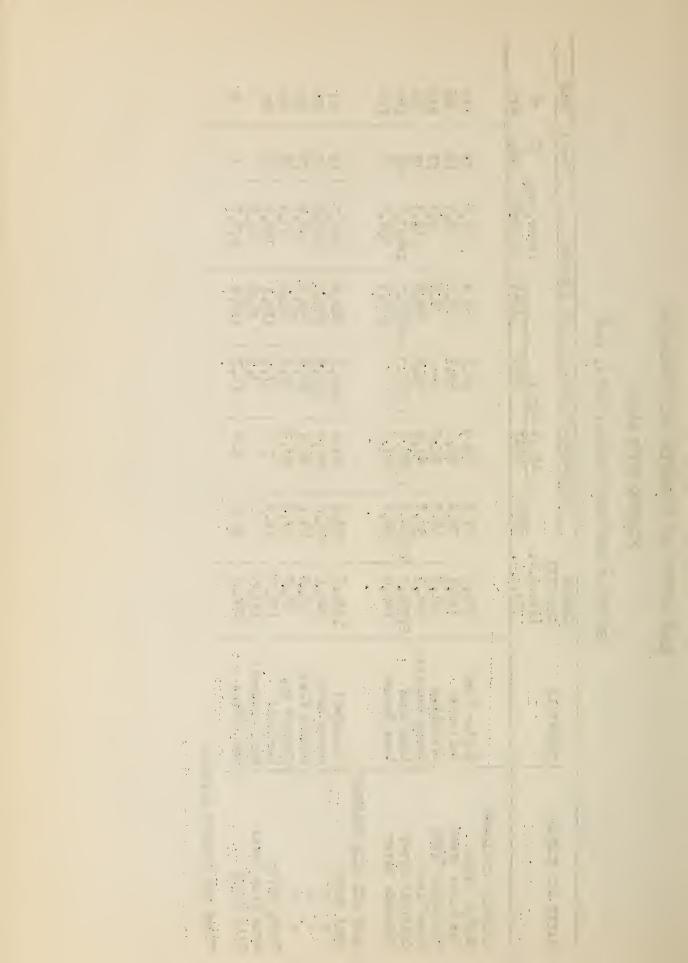


SNOW SURVEYS AND IRRIGATION WATER FOREGASTS

COLORADO RIVIR BASIN

STATUS OF RESTRVOIR STORAGE, MAY 1, 1948

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COLORADO DRAINAGE							ì		
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Los Pinos River	Vallecito	126,3	7,02	66,2	7 7 7	,0	7,77	74	7,70
Groundhog Creek	Groundhog	21,7	16.7	12,0		, w	10	77	67.5
Blue River	Green Mountain	146.9	50.7	61.0	56.2	70 07	ָרָ הא	- 2	7 00
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Gila River	San Carlos	1200.0	17°71	0.4	14.7	122,9	276.9	rH	5
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SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for
COLORADO RIVER BASIN
May 1, 19¹+8
SUMMARY OF MAY 1 SNOW SURVEYS AND COMPARISONS OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

							Number				1948 Water Content	Content
MATERSHEDS	Snow Depth	Depth		Water Content	Content		Courses		Snow Density		in percent of	at of
	Thirteen 1947 1948	1947		Thirteen 1947	1947	1348	uī	Thir teen	1947	3761	Thirteen	1947
	year.			year			Average	year			year	
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COLORADO RIVER	Ine	In.	In。	In.	Ins	In,		Perceni	Percent Percent	Percent		
Colorado River**	36.1	146,2	39.3	12,9	16,9	14,6	25	36	25	37	113	25
Yampa River	32,6	10°0	36.9	13,8	16,7	15,7		7,5	7.5	43	117	お
White River	0.1	され 。 され	35,2	12,2	17,4	12,6	~	23	33	36.	103	72
Roaring Fork	25,6	33,5	29,9	5,0	13,4	10,8	3	37	C 1 7	36	777	81
Gunni son Piver	39,0	17	中"村	75,3	17.3	15,0	co	33	0.1	우	118	104
Uncompangre River	25,2	28,8	23,6	5	10,7	9.3	p1	53	37	39	98	22
Dolores River	9 7	0,0	0,0	ار ال	0.0	0.0	Н	32	1	1	1	1
San Juan Piver	29,2	18,8	32,7	12,7	7.7	15,7	Ŋ	1,13	39	1.8	123	212
Animas River	12,5	9°6	0,0	7.4	3.6	3,1	к,	38	38	6,	99	98
Green River	20,8	1.30,4 26,0	26,0	7.07	11,7	9.3	5	37	38	36	120	79
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*Some for shorter periods, ** Above Grand Junction TA <1.

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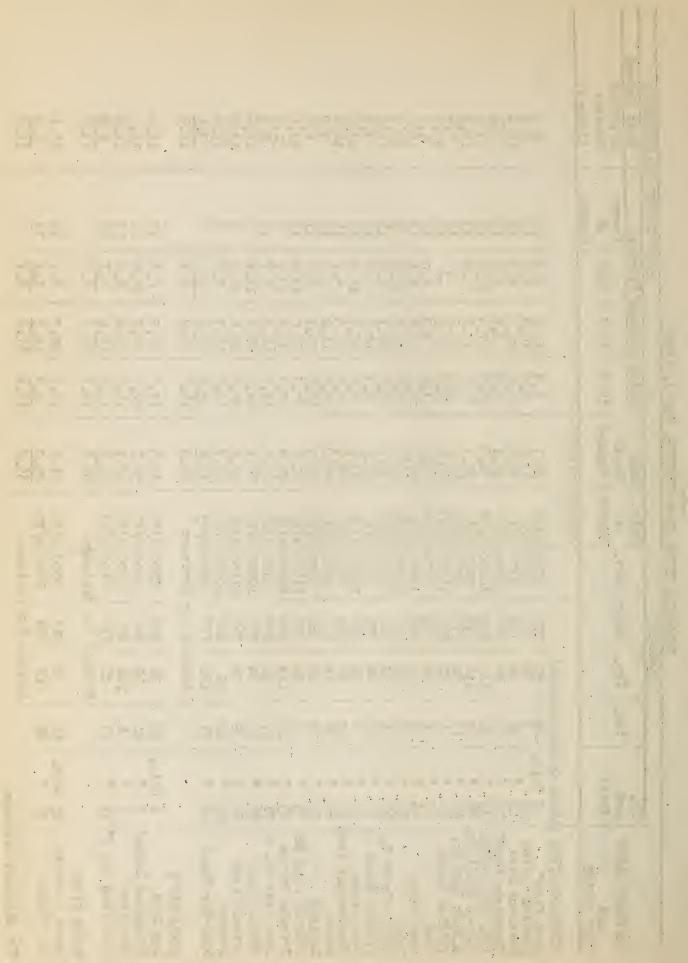
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		Precipitation*	Departure	Precipitation*	Departure
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		A:02:11 30	Normal	April	Formal
		Inches	Inches	Inches	Inches
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Green	Myoming	200	+0,27	1,19	±0,02
San Juan	New Mexico	5.38	~0°,36	0,34	-0.55
Colorado	Arizona.	7,61	76°0=	0,16	-0° 76
Gila	New Mexico	4,52	-1,27	0,01	90,00

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COLOFADO FIVER SNOW SURVEYS, May 1, 1948

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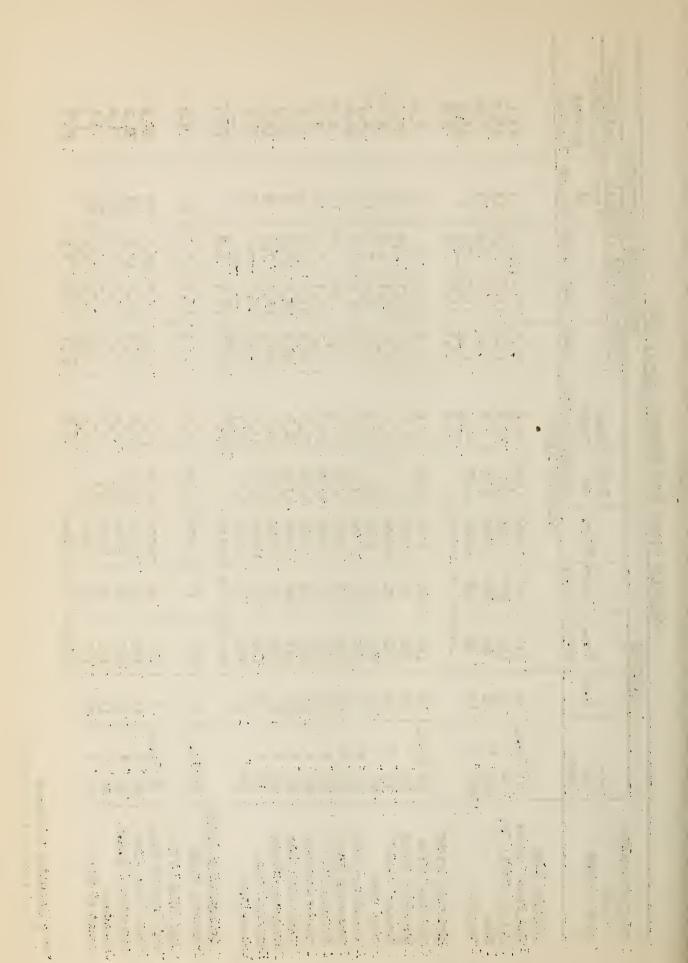


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COLORADO RIVER SNOW SURVEYS, May 1, 1948

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	DRAINAGE BASIN	and	SNOW COURSE		BOARING BORK	Ind. Pass Tunnel	N.Lost Trail Cr.	Nast	Ivanhoe	GUNNI SON RIVER	Crested Butte	Marshall Creek	Poncha Creck*	Park Cone	Alexander Lake	Snowshoe Mesa	Ironton Park	Trickle Divide	Park Reservoir	Porphyry Croek	Kannah Creek	таке стъу	UNCOMPARGRE RIVER	Ironton Park	SAN JUAN RIVER			Silverton Sub. S.	Cascade	Granite Feaks	

*On adjacent drainage (1) Not included in average



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			Snow	Depth	(Inches)	RIVER			0.0		0,0	. ,	0,0	0,0	27,6	7.9		12,3	17.9	12.8	28,2	23,5	4.30	26.0	,
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		DRAINAGE BASIN	and	SNOW COURSE			DOLORES RIVER	Rico	Telluride	Lizard Head		ANIMAS RIVER	Silverton SS	Cascade	Ironton Park*		GREEN RIVIR	Dutch Joe R.S.	Mulligan Park	Kendall R.S.	Loomis Park	Snyder Basin R.S.	Fincy La Barge		

*On adjacent drainage

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The following organizations cooperate in the snow surveys and irrigation water supply forecasts for the Colorado. Missouri-Arkansas and Rio Grande watersheds by furnishing funds or services.

STATE

Colorado State Engineer
Wyoming State Engineer
Utah State Engineer
New Mexico State Engineer
Montana State Engineer
Nebraska State Engineer
Colorado Experiment Station
Colorado Extension Service
Montana Experiment Station
Utah Experiment Station

FEDERAL

Department of Agriculture
Forest Service
Soil Conservation Service
Department of Interior
Bureau of Reclamation
Geological Survey
National Park Service
Department of Commerce
Weather Bureau

War Department
Army Engineer Corps

PUBLIC UTILITIES

Colorado Public Service Company
Western Colorado Power Company
Montana Power Company
Public Service Company of New Mexico
Denver and Rio Grande Western R. R. Company
MUNICIPALITIES

City of Bozeman City of Denver City of Boulder

WATER USERS ORGANIZATIONS

Poudre Valley Water Users Association Arkansas Valley Ditch Association Colorado River Water Conservation District

Farmers Reservoir and Irrigation Company
San Luis Valley Irrigation District
Santa Maria Reservoir Company
Costilla Land Company
Uncompanger Valley Water Users' Association
Wyoming Development Company
Goshen Irrigation District
Kendrick Project
Pathfinder Irrigation District
Salt River Valley Water Users' Association
San Carlos Irrigation and Drainage District
Twin Lakes Reservoir and Canal Company

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